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HYDRATE OF CHLORAL, WITH CASES ILLUSTRATING ITS ACTION.

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CHLORAL was discovered by Liebeg in 1832. Its chemical properties were more fully investigated by Dumas in 1834. It was afterwards studied by MM. Regnault, Kopp and Wurtz. It was known, however, chiefly or only to chemists, and regarded by them more as a curiosity than an article of value, till M. Liebreich, of Berlin, introduced it in the form of hydrate of chloral into therapeutics. Since then its physiological and therapeutical action has been investigated by MM. Bouchut, Bricheteau and Demarquay of France, Dr. B. W. Richardson, J. B. Russell, of England, Dr. William A. Hammond of New York, DaCosta of Philadelphia, and others both in this country and Europe. It has been tried both in hospitals and in private practice. On the whole, the verdict of the profession is in its favor. Its probable value as a therapeutic agent is such that clinical observations with regard to its action in disease are interesting and important. It is moreover interesting as an admirable illustration of the close alliance between the chemical constitution, the physiological action and the therapeutical use of drugs. This alliance is becoming every day more apparent, and the time is not far distant when it will be generally recognized by the practising physician, and constantly guide him in the art of prescribing.

Chloral, from which the hydrate is made by the addition of water, is described by Dr. Benj. W. Richardson, the distinguished London physician and physiologist, as "an oily liquid, colorless, and of pungent odor. It is an irritant to the skin. Its specific gravity is 1500 as compared with water at 60°; its vapor density is 74 compared with hydrogen as unity; and its boiling point is 99° Cent.—210° Fahr."* It is made by treating anhydrous alcohol with chlorine.

The hydrate of chloral is made by combining chemically water and chloral. This is described by Dr. Richardson, in the article just quoted, as a "white, crystalline substance. The crystals are rhombic. In the formation of the hydrate, about eight parts of chloral combine with one part of water, forming nine parts of the crystalline substance. Hydrate of chloral, therefore, contains 90 per cent. of chloral. The hydrate, although a solid, volatilizes like camphor without decomposition. It dissolves in water so freely that a saturated solution contains 50 per cent. It dissolves also in alcohol and ether." We learn from the same authority that when it is acted upon by an alkali, as potassa, soda or ammonia, it is decomposed into a formate and chloroform. If any quantity of potassa is added to a solution of hydrate of chloral, a corresponding amount of chloroform is evolved. The presence of the latter agent may not only be detected by the milkiness of the fluid, but by the characteristic odor of chloroform. This fact of the evolution of chloroform from the hydrate of chloral, when the latter is put in contact with alkalies, is an important practical one to the physician. It not only indicates the impropriety of uniting an alkali with the hydrate of chloral in prescriptions, but it points to the most probable explanation of its physiological action. Some account of this action will form an appropriate introduction to the clinical observations that follow.

Physiologists have experimented with hydrate of chloral upon all classes of animals. Its action has been studied on fishes, frogs, rabbits, cats, mice, dogs, pigeons, and I know not how many other living creatures as well as man. Upon all of them it exerts a certain similarity of action, though with some curious differences. When

* London Medical Times and Gazette for Oct. and Nov., 1870.

fishes are put into water sufficiently charged with it, they absorb it by inhalation, grow sluggish and presently fall asleep. Frogs fall asleep by the subcutaneous injection of half a grain; they are apt to be killed by three-quarters of a grain, and are sure to be killed by more than the latter dose. A quarter of a grain will put a mouse into a sound sleep. Rabbits come easily under its influence, whether given by the stomach or subcutaneously, and may be put into a gentle sleep, or narcotized or killed by it, at the will of the experimenter. Pigeons, that according to Weir Mitchell,* tolerate enormous doses of opium with impunity, are easily narcotized by hydrate of chloral. Cats come readily under its influence, and when subjected to it they are said to purr with obvious comfort as they go to sleep.

We learn from the admirable researches of Dr. Richardson,† that the sleep induced in all sorts of animals by hydrate of chloral resembles natural sleep. Recovery from this sleep is unattended with any apparent derangement of the system. The drug may be administered in doses just large enough to produce this sort of natural sleep, or in doses large enough to produce a dangerous degree of narcotism, or in doses that shall rapidly prove fatal. In other words, the hydrate of chloral is to animals a pleasant and harmless anodyne, or a dangerous narcotic, or a rapid and fatal poison, according to the dose in which it is given. In this respect its action on animals resembles its action on man. When death is produced, the heart seems to be the ultimum moriens. The circulation may be seen going on in the web of a frog's foot, when the animal is so profoundly under the influence of the drug as to appear dead.

Muscular relaxation, complete anæsthesia, absence of reflex movements and reduction of animal temperature, in varying degrees, dependent upon the doses given, accompany the narcotism of hydrate of chloral. An apparent hyperæsthesia has sometimes been noticed, especially by M. Demarquay, but it is an occasional and exceptional phenomenon.

A knowledge of the physiological action of the hydrate of chloral on man is an indispensable guide to its use in disease. We do not yet comprehend this action completely, but we know enough of it to aid us materially in its clinical administration. The points of greatest importance to the practitioner are its absorption, its elimination, the changes which it undergoes in its progress through the system, and its action on the system from the period of absorption to that of complete elimination.

1st. *Absorption.*—Hydrate of chloral is readily absorbed by the mucous surfaces of the stomach and rectum, and also by the cellular tissue. For absorption by the latter tissue it should be administered by subcutaneous injection. This procedure, on account of the local irritation which it induces, is not one to be recommended. The ordinary method of giving it by the stomach is the best. If concentrated when thus given, it produces local irritation and nausea, and is apt to be thrown off. It is easily and quickly absorbed from the stomach if largely diluted. I have usually found that a solution stronger than a grain of the hydrate to a drachm of water will produce gastric uneasiness. When diluted to this or to a greater extent, it is well tolerated by the stomach. If a moderate dose is given, viz. one of thirty grains or less, it is probable that the whole of it is absorbed in a few minutes. In the first of the following cases, the hypnotic effect was produced in ten minutes after the administration of the drug. As the dose of it in that case was only fifteen grains, it is fair to infer that the whole, or nearly the whole, of the quantity given passed from the stomach into the blood within that space of time. The stomach appears to be capable of passing into the blood any quantity of hydrate of chloral that may be put into it, provided that the article is pure and sufficiently diluted. Hence any quantity of it may be given at a dose, so far as the stomach is concerned, that it is wise to administer. The presence of food in the stomach would be likely to delay its absorption. Any irritation of the stomach, like gastritis, would probably render that organ intolerant of it, though I have never proved this by experiment. The absorption of the hydrate of chloral by the stomach, then, is easily and quickly induced when it is given largely diluted upon an empty stomach whose mucous membrane is in a normal condition.

2d. *Progress through the System.*—The hydrate of chloral goes from the stomach into the blood unchanged. In the blood it meets with an alkali. The experiments of Dr. Richardson and others show that the hydrate of chloral in contact with an alkali is decomposed and chloroform evolved. Indeed, chloroform has been obtained from the vapor arising from a mixture of freshly drawn blood and hydrate of chloral.

* Am. Jour. Med. Science, Jan., 1870.

† London Med. Times and Gazette, Oct. and Nov., 1870.

We have the authority of Liebreich for stating that when the hydrate meets with an alkali in the blood, it behaves as it does when it meets with alkalies out of the system. That is, as soon as hydrate of chloral reaches the blood by any avenue, it commences to yield chloroform. The amount of chloroform thus given to the blood is proportionate to the quantity of chloral absorbed and also to the alkalinity of the blood. The total quantity of chloral absorbed is not immediately decomposed into chloroform. The drug mixes with the blood, passes with the blood to every part of the organism, and, as it circulates, continues to yield chloroform until it is exhausted. In cases of fever of a low type, such as typhus and typhoid fever, when the blood is highly charged with ammonia, that fluid is in a state to extract chloroform from chloral more rapidly than when it is less alkaline. Under such circumstances a given dose of hydrate of chloral should produce its physiological action more rapidly and powerfully than it ordinarily does. Since writing these words I have met with the clinical experiments of Dr. J. B. Russell* with the hydrate in typhus fever, at the Glasgow Fever Hospital, and these indicate that such is the case. Doubtless other substitution compounds than chloroform result from the decomposition of hydrate of chloral in the blood, and exert more or less influence on the organism till they are eliminated from it. What these compounds are, and what their physiological action is, cannot yet be stated. It is probable that some of the physiological actions of the drug we are considering are due to these compounds. Until they are discovered and their effects known, a complete solution of the problem of the physiological action of hydrate of chloral is impossible.

The above theory of the decomposition of hydrate of chloral in the blood into chloroform, not all at once, but with comparative slowness, particle by particle, just as fast as a particle of chloral meets with a sufficient quantity of an alkali, is that of Liebreich. It is a beautiful and ingenious theory, and one that seems to me justified by physiological experiment and clinical observation. The chloroform, yielded by the chloral to the blood, of course behaves in that fluid just as the same amount of chloroform would do if it were passed into the blood at the same rate by any other process. Hence hydrate of chloral, according to its dose, may be soporific, anæsthetic or dangerous because it yields chloroform. But it is not probable that in moderate doses it will ever prove dangerous, because in such doses the chloroform evolved will be eliminated too rapidly to be so.

The hydrate of chloral, then, passes rapidly from the stomach into the blood unchanged. In the blood it is decomposed into chloroform, and perhaps into other compounds also. These substitution compounds continue to circulate with the blood throughout the organism, until they are oxidized in it or eliminated from it.

3d. *Elimination.*—Most, if not all, of the hydrate of chloral is eliminated from the system in the form of chloroform, into which it has been changed. Dr. Richardson states that he has detected the odor of chloroform in the breath of animals sleeping under the influence of chloral. Messrs. Lallemand, Perrin and Duroy* have shown that chloroform is eliminated chiefly by the pulmonary mucous surface. They have also shown that when it is rapidly introduced into the organism it is more rapidly eliminated than when it is slowly introduced. When it is slowly introduced, at least an hour and a half is required after the introduction of the last dose; that is, after the last quantity of it has been inhaled, for its complete elimination from the blood. So far as we know at present, the elimination of the hydrate of chloral is the same as the elimination of chloroform slowly introduced into the blood. So much of the hydrate as has been changed into chloroform is eliminated by the pulmonary mucous surface in an hour and a half, or less, after its absorption. When, therefore, it is desirable to keep the blood charged with the hydrate of chloral continuously, it should be given at intervals of not more than two hours. If this is undesirable, a second dose should never be administered until sufficient time has elapsed for the elimination of the first. The practitioner should select one or the other of these modes of administration, in accordance with the therapeutic object he has in view. How any of the other substitution compounds of the hydrate of chloral are eliminated, we do not yet know. They are probably oxidized in the organism.

4th. *Action on the System.*—Hydrate of chloral, while in the system, affects especially the blood, the cerebro-spinal axis, the heart and arteries, the muscular system, and the temperature.

* Glasgow Medical Journal, Feb., 1870.

* Du Rôle de Alcohol et des Anesthesiques dans l'Organisme, p. 350, etc.

When a single therapeutic dose of chloral is administered, it passes into and out of the blood without producing any chemical change in that fluid. If the dose, however, is so large as to be a toxicological one, the blood undergoes a change. It becomes, as we learn from Dr. Richardson's experiments, less coagulable, and its corpuscles become shrunken and crenate; it is in fact devitalized. In this respect, the action of chloral on the blood resembles that of large or long continued doses of ammonia or potash. If chloral were administered in therapeutic doses for a long time, and with such short intervals between each dose, that its complete elimination from the blood, for at least a portion of each twenty-four hours, were rendered impossible, a devitalization of the blood would doubtless result. That such is not the case, provided chloral is given so as to allow for its daily complote elimination, we learn from clinical observation. Cases II., V. and VI. that follow are illustrations in point, for the patients there described took hydrate of chloral daily for many weeks, without loss of flesh, color, strength, appetite, or other ill effects. I have said that in this respect the action of chloral on the blood resembles that of alkalies. Alcohol would have been a better illustration; for alcohol administered in therapeutic doses, for a long period, with such intervals between them, that the blood may be completely freed from it during a portion of each twenty-four hours, does not change the character of the blood; while it does change and devitalize the blood, if its daily and complete elimination is not provided for.

The physiological action of chloral on the cerebro-spinal system indicates its chief value in therapeutics. My own observation confirms the statement of M. Bricheteau* that this action "is manifested by a period of agitation, more or less pronounced, sometimes very short, and not of importance; by a period of progressive somnolence, in which consciousness is first dulled and then extinguished under a profound sleep, accompanied by a slight or a complete anæsthesia, according as the drug is pure and given in a sufficient dose; and in some individuals, by a sort of intoxication, resembling drunkenness at the moment of awakening." Sleep and a certain amount of anæsthesia are two marked effects of therapeutic doses of chloral. Profound sleep and complete anæsthesia are the result of toxic doses. The sleep of a therapeutic dose is strikingly like natural sleep. The limbs lie in natural attitudes. The respiration is easy. The skin is normal, or a little cool. The pupils of the eyes are contracted, but easily dilate. A sufficient noise or disturbance arouses the sleeper, who asks what is the matter, and directly falls asleep again. The patient of Case II. was constantly anxious about an aged and invalid father, who slept in the chamber below her. Any unusual noise in that chamber at night always aroused her from her chloral sleep; she would leave her bed, go below for a moment, investigate the cause of the disturbance, return to her bed and at once fall asleep again. The duration of the sleep varies from two or three to six or eight hours, according to the dose and to the impressibility of the subject.

Complete anæsthesia is not produced by hydrate of chloral on man, unless doses that approach or really are toxic ones are given. Therapeutical doses produce a moderate insensibility, and therefore may be used to allay a moderate amount of pain, but they will not replace opium in this respect. The order in which the nervous system is affected by therapeutic and toxic doses is stated by Dr. Richardson to be as follows. Therapeutic doses affect, 1st, The sympathetic ganglia. 2d, The cerebrum. 3d, The heart. In fatal cases, "the functions destroyed are, 1st, The cerebral. 2d, The voluntary muscular. 3d, The respiratory. 4th, The heart."

The action of the heart is often quickened soon after chloral is absorbed, but in a short time the quickened action gives place to a slower and weaker movement. It is the rule for therapeutic doses to decrease the frequency and force of the heart's beat. In nine observations made by DaCosta,* in one of which ten and in the rest fifteen grs. were injected hypodermically, the following result was obtained. In five cases the pulse fell in an hour from 90 to 78—104 to 86—96 to 82—96 to 44 and 100 to 96. In two cases the number of beats was unaltered; and in two it was increased from 60 to 64, and from 80 to 84. M. Bouchut, DaCosta and Dr. Anstie agree that the sphygmographic trace of the chloralized pulse is sinuous with a diminished rise and fall. Toxic doses render the pulse quick and small, and contract the arterioles, sometimes, says Dr. Anstie, "to the extent of strong spasmodic contraction."

The condition of the cerebral bloodvessels, while under the influence of hydrate of

* Bulletin de Therapeutique, Nov. 1869.

* Amer. Jour. Med. Sciences, April, 1870, p. 361.

chloral, varies with the dose and with the length of time after its administration. Dr. W. A. Hammond has demonstrated* by several ingenious and interesting experiments, that the primary effect of a full therapeutic dose is to cause congestion of these vessels; while the secondary effect is to induce the opposite condition. He has also shown that a small dose produces only congestion of the cerebral vessels. Such a dose is probably eliminated before there is time for secondary results to occur.

Animal temperature is lowered by chloral, if a sufficient dose is given. In all but one of DaCosta's cases just referred to, the temperature either fell slightly or was unaffected. In one case it rose from 99° to 100°·5. Bricheteau noticed the decrease of temperature. Dr. Richardson has confirmed it by fifty carefully conducted experiments. A comparison of the results arrived at on this point by these and other observers, however, points to decrease of temperature as the accompaniment of a toxic rather than of a therapeutic dose. An attempt to largely lower the animal temperature by chloral would be a dangerous experiment. I agree with M. Bricheteau that "the loss of one degree (centigrade) of temperature in an hour by the action of chloral would alarm me, if it occurred in one of my patients."

Under the influence of therapeutic doses of hydrate of chloral, the respiration is slowed as well as the action of the heart, but not to any great degree. Muscular relaxation also occurs.

Therapeutic Indications.—The therapeutic indications and contra-indications which these physiological phenomena point to, are obvious. Hydrate of chloral may be given so as to produce sleep, diminish sensibility, allay irritation, slow the heart, relax muscular tissue, lower animal temperature, devitalize the blood, cause anæsthesia and destroy life. Part of these phenomena have a therapeutic value, and part are toxic. They may be arranged in two groups, thus:—

Therapeutic Group.	Toxic Group.
Sleep.	Slow or irregular pulse.
Diminished sensibility.	Complete anæsthesia.
Diminished irritation.	Altered blood globules.
Muscular relaxation.	Great diminution of temperature.
Contraction of arterioles.	Great muscular relaxation.
	Death.

In the administration of chloral, the practitioner of course desires to obtain the therapeutic and avoid the toxic phenomena. This can easily be done by a proper attention to the purity of the article and to the mode of its administration. The indications to produce sleep, diminish sensibility and allay irritation, occur very often in the treatment of disease. Hence it is not surprising that chloral has been tried clinically in a great variety of diseases. Dr. James B. Russell has given, in the *Glasgow Medical Journal*, a table of 21 cases (of fever, previously referred to) in which he employed it. M. Bricheteau, in the *Bulletin de Thérapeutique* for November, 1869, has recorded the result of his experience of it in nephritic colic, extraction of teeth, chorea and tetanus. Dr. DaCosta, in an article in the *American Journal of the Medical Sciences*, quoted above, has presented a record of its use in lead colic, rheumatism, cerebral softening and abdominal tumor. Dr. F. Goolden tried it in paralysis; Dr. J. H. Barnes and Dr. Hammond in acute mania; Dr. S. Teller in puerperal mania; Dr. Hay (*Practitioner*, March, 1870) in puerperal convulsions; Dr. Hardy in neuralgia; Dr. H. Derby in iritis; and this article concludes with an account of its use in phthisis, insomnia, paralysis agitans, opium eating, hysteria, and cardiac disease.

The contra-indications to the use of the hydrate of chloral have not yet been fully ascertained. Its physiological action on the heart is such as to render one very cautious about administering it in cardiac affections. In Case VIII. of the following series, pain in the cardiac region and fluttering of the heart followed so directly after the taking of chloral that I could not doubt its action on that organ in that case—an action which no physician would care to push farther. The experiments of Dr. Hammond show that it is not safe to prescribe it in all forms of disease of the head. Organic disease of the heart, congestion of the brain, meningitis, and very probably cerebral anæmia, contra-indicate its use. An irregular pulse, and a cold skin, occurring soon after the exhibition of chloral, are signs of danger. Dr. J. R. Reynolds, in the *Practitioner* for March, 1870, records a case in which a dose of 45 or 50 grs. was followed in two hours "with cold extremities; an excessively rapid, weak, irregular and intermittent pulse; jactitation of limbs; an intolerable sense of sinking and oppression at the pit of the stomach; gasping breathing and confusion of thought." These symptoms disappeared as stimulants were given, and the patient rescued from imminent danger.

Dose and Mode of Administration.—In the

* New York Medical Journal, Feb. 1870.

first place, before giving hydrate of chloral at all, the physician should be assured of the purity of the article. I have experimented clinically with hydrate of chloral of English, German, French and American manufacture. In my hands the English has proved to be the best—the most agreeable to the taste of patients, accompanied with little or no nausea, and followed by no ill effects. The German and French article has caused some nausea and slight cerebral disturbance. I am sorry to add, that I have never given a dose of American chloral which has not produced a great degree of nausea, and been followed for twelve or twenty-four hours by headache and cerebral uneasiness. Chemists tells us that the hydrate of chloral is not pure unless, when added to a solution of caustic potash, it will disengage the odor of chloroform without coloring the solution. Coloring the solution indicates impurity.

The average dose for an adult is 30 grs. A decided hypnotic effect is produced in some impressible individuals by 15 grs. It is not safe to exceed the dose of 60 grs. in the course of ten or twelve hours. I have noticed that 30 grs., given in two doses of 15 grains each, half or quarter of an hour apart, will produce less gastric uneasiness and greater hypnotic action than when given in a single dose. Theoretically, in consequence of the rapid elimination of the chloroform evolved from the chloral in the blood, such should be the case. It may be administered by the stomach or by the rectum, and it is not necessary to give a larger dose by the latter than by the former method.

M. Claude Bernard has shown* that less chloroform is necessary to produce anæsthesia in an animal or a man previously narcotized by morphia, than in one to whom morphia has not been previously given. I have observed, clinically, that there is a similar mutual action between hydrate of chloral and morphia. Case VI., which follows, is an illustration of this fact. A fourth of a grain of one of the salts of morphia, followed in an hour by 15 or 20 grs. of hydrate of chloral, will produce a greater anæsthetic and hypnotic effect than a larger dose of either of them given alone. In many cases, where a certain dose of morphia is sufficient to allay pain, but not to produce sleep, it is better to follow the morphia by hydrate of chloral than to repeat the former.

In concluding this account of the physiological and therapeutical action of chloral, I cannot express my opinion of it more clearly than to quote the words of Dr. DaCosta in the paper previously referred to, viz.: "that it is an important addition to our therapeutic means—chiefly, however, as a hypnotic. Its action as a destroyer of pain is limited; nor do I think it can compete with ether or chloroform to produce the insensibility requisite for surgical operations. Its chief value seems to be that of an auxiliary to opium, or to take its place when opium is not admissible." As a hypnotic, hydrate of chloral is better than opium. Chloral sleep is better than opium sleep.

The following cases illustrate most of the physiological actions of therapeutic doses of hydrate of chloral which have been pointed out.

Case I. *Insomnia.*—An old gentleman of more than 80 years of age had an acute bronchitis in the summer of 1869. He got well, and in the following autumn had a second attack of the same disease, and recovered from this. During the winter of 1869–70, he suffered from an irritable bladder, which tormented him for two or three months and then got well. In consequence of these various attacks he became weak, and lost appetite and flesh. His nights were often restless, and he frequently required some form of opium in order to obtain sleep. It was not necessary to give him a large dose. Twenty drops of tinctura opii deodorata, or an eighth of a grain of the sulphate of morphia, were generally sufficient to enable him to get a requisite amount of sleep. Hyoscyamus, camphor, hops, &c., were tried without effect. Opium gave him sleep, but it also gave him a coated tongue and constipation of the bowels. It did not seem to diminish his appetite or disorder his stomach. I discontinued the opium and gave him fifteen grs. of chloral hydrate in three ounces of syrup tolu and water. This gave him several hours of quiet and apparently natural sleep. The same dose was repeated for a number of nights, with the same result. It was discontinued after a while, because he got well enough not to require any anodyne. This person came very quickly under the hypnotic influence of chloral. He fell asleep so soon after he swallowed it that I had the time measured, and found that, in one instance at least, he was asleep in less than ten minutes after he had taken it. He complained of no nausea, either at the time of taking it or on awaking. It did not seem to inconvenience him in any way. All the anodynes I tried him

* Bulletin de Thérapeutique, Septembre, 1869.

with, except opium and chloral hydrate, failed to induce sleep. Of these two, the latter served him much the best. The smallness of the dose in this case is worthy of remark. Perhaps at the age of 80 a smaller dose should be given than when a patient is 20 or 30 years younger.

Case II. *Insomnia.*—A lady, between 50 and 60 years of age, received a blow on her head ten or twelve years ago, by which the skull was depressed. The surgeons who were called did not think it safe or necessary to trephine the skull. She got well without any surgical operation. Since the accident her head has frequently disturbed her in the way of headache, sense of cerebral oppression, vertigo and the like, though on the whole she has enjoyed a tolerable degree of health, and been able to attend to her usual household duties. The principal difficulty has been insomnia. She has not been able to sleep more than three or four hours at night. She reports her average sleep for the last ten years at three hours per night, and no sleep by day. After several nights of three or four hours sleep each, there would be a night of four or five hours sleep, and so on. All sorts of anodynes have been tried with her, such as hyoscyamus, opium, camphor, lupulin, ether, ardent spirits, Indian hemp, bromide of potash, &c. Of these, whiskey and Indian hemp produced the best results in the way of sleep. The bromide of potash did not cause sleep, and was followed by an intolerable sense of weight and discomfort in the head, and also by mental depression for many hours after it was taken. For the last few years none of these anodynes have been employed. The patient has got on with such sleep as came to her, unassisted. On the 13th of January last, I gave her twenty grains of chloral hydrate, which seemed to act favorably, but did not produce much increased sleep. The dose was increased each night till 50 grs. were taken. This was followed by five hours of quiet, easy and apparently natural sleep. From that date to this present writing, she has taken 50 grs. of chloral, in divided doses, every night, except a few nights, when it was discontinued to see what the result would be. When it was discontinued, she slept only three hours as before. On the other nights she has always slept five or six hours. She has complained of no sort of discomfort, either directly after taking the hydrate or at any other time. There is one exception to this statement. She took some hydrate of American manufacture a few times, which was invariably followed by nausea for half an hour or more, directly after swallowing it, and by headache the next day.

Case III. *Phthisis.*—Miss S., a young girl of 16, with the hectic, emaciation, cough and diarrhœa of advanced tuberculosis, during the past winter was especially troubled by her cough at night. It assumed an irritable and spasmodic character as soon as she lay down. Unfortunately, she did not tolerate opium well. I gave her ten grs. of chloral hydrate, and the dose was sometimes, not often, repeated once or twice during the night, so that she got (either 10 grs. or) from 10 to 30 grs. of chloral, in divided doses, during each night. The result was excellent for several weeks. The cough was quieted by each dose, and refreshing sleep followed, which generally continued about two hours. After a few weeks, the taking of the above amount of chloral was not followed by relief from coughing or by sleep. An increased dose produced nausea, and the drug was discontinued. In the case of this patient, the rapidity with which sleep was induced was as remarkable as in the first case.

Case IV. *Hysteria.*—Miss T., æt. 47, has been subject for several years to neuralgia in various parts of the body, and to chronic inflammation of the ovaries. She has also had frequent hysterical symptoms and general nervous derangement. One of her most prominent difficulties has been, for the past few years, sleeplessness. When troubled in this way, the bromide of potassium formerly produced quiet sleep. During the past year, however, I have abstained from giving it to her, partly because it did not quiet her as much as formerly, and partly because it seemed to be wise for her to take as few drugs as possible. During last January she slept so little that it became necessary to interfere. I accordingly gave her chloral hydrate. She took sometimes thirty and sometimes forty-five grs. in solution on going to bed. The immediate effect was generally to produce a slight amount of nausea. This lasted rarely more than fifteen minutes, after which she went to sleep, and slept quietly for several hours. For nearly three months, from the last week in January till the first of May, she took chloral more than two-thirds of the time at night. There were a few occasions when the largest dose above mentioned failed to cause sleep, and I did not wish to increase the quantity. These occasions were times of unusual excitement. Excepting these, she always got a suffi-

ciently good night from the drug. Besides the temporary nausea just referred to, it produced no ill effects. There was no headache, indigestion or discomfort during the day. She did not go to sleep so soon after taking chloral as I have usually seen persons do. Sometimes more than an hour elapsed after taking it, before sleep was induced.

Case V. *Paralysis Agitans.*—A man between fifty and sixty years of age, had the first symptoms of paralysis agitans more than ten years ago. The disease has steadily progressed, exhibiting the tremors, paralysis, forward stoop and accelerating walk that are so characteristic of it. During the past year, it has evidently been approaching its final stage. The jactitations have not been entirely suspended by day, at any time lately, and have often aroused him at night. He has suffered from intense pain and weariness, and been unable to feed himself, or read or help himself at all. On lying down at night, the jactitations have been violent enough to shake the whole bed perceptibly. He was often one or two hours shaking in this way on his bed, before he fell asleep. If he awoke during the night, which not unfrequently happened, he had to go through another long process of shaking before sleep calmed him again. He awoke early each morning, and directly upon awaking the tremors began again, to stop only when another night's sleep brought him a little respite from them. Considerable relief was obtained from morphia, after conium, valerianate of zinc, cannabis Indica, &c., had either been tried and failed to do any good, or had ceased to afford relief. The relief which morphia yielded was partial, and it was necessary to increase the doses steadily in order to get much benefit from it. On Feb. 9th I gave him 20 grs. of chloral hydrate, with directions to repeat it if necessary. The effect of the first dose was most fortunate. In about ten minutes after it was swallowed, the jactitation ceased. Presently he fell asleep. In a few hours he awoke and got a second dose, with an equally good result. From that night to this present writing, a period of more than three months, he has taken every night from 40 to 60 grs. of chloral in divided doses, and has usually slept an average of eight hours, peacefully, after the taking of it. Two or three times, he has tried an article of American manufacture, and then has suffered from nausea, directly after swallowing it, and from a disturbed head on the following day. Excepting these occasions, it has produced no apparent ill effects. I cannot see that it has checked the progress of the disease, or done other good than the unspeakable one of giving him rest from jactitation and pain, one-third of each twenty-four hours. His own estimate of the value to himself of the relief thus obtained may be gathered from the fact, that when, not long ago, there happened to be a short supply of foreign chloral in Boston, he bought up all there was in the city, lest he should be deprived of it for a time.

Case VI. *Opium Eating.*—An octogenarian lady took morphia by the advice of her physician thirteen or fourteen years ago. She continued to take it of her own accord afterwards, and has persisted in the habit thus acquired. She now takes about two grains of sulphate of morphia every night. In consequence of an attempt to discontinue its use, awhile ago, she became restless, excited, nervous and sleepless, with symptoms not unlike those of delirium tremens. After two or three days and nights had elapsed without sleep, I gave her 15 grs. of chloral hydrate. This quantity calmed her. A second dose of the same amount was followed by a sleep of several hours. Unfortunately, the habit of taking morphia could not be broken up, and she resumed her customary dose at night. This has quieted and comforted her, but has not always induced sleep. When it has not, 15 grs. of chloral have always been sufficient to put her to sleep in a short time. Less chloral was required to produce sleep when morphia had been previously administered, than when the latter article had not been given. There is a physiological explanation of this fact which has previously been referred to.

Case VII. *Phthisis.*—Mr. E., æt. 28, died of phthisis not long since. The disease ran a rapid course. He was not troubled by a cough any more than most phthisical patients are; perhaps not so much as the majority are. For the last two months of his life, he required some sort of anodyne every night to enable him to obtain a necessary amount of sleep. For this purpose I gave him 15 grs. of chloral hydrate in solution, with directions to repeat the dose according to circumstances. Sometimes one dose was enough to quiet him sufficiently for the night, and sometimes he took two or three doses before rest was procured. The anodyne action of the drug was so satisfactory, that it was undesirable to try any other. He took chloral nearly every night for the last two months of his life. No unpleasant effects were observed.

Case VIII. *Organic Disease of the Heart.*—Mr. S., æt. about 40, has suffered for many years past from valvular disease of the heart, the sequla of rheumatism. Last April he was attacked with an ulcerated sore throat and otitis of the right ear. The inflammation of the ear terminated in a central perforation of the membrana tympani of that ear. During convalescence from the acute attack of the throat and ear, he complained greatly of tinnitus aurium and a sense of unusual discomfort in his head. These disturbed him so much that his sleep was seriously interfered with. With the hope of relieving him, I gave him 15 grs. of chloral hydrate at night, with directions to repeat the dose in half an hour if necessary. He went to sleep shortly after taking the first dose. On the next morning, he asked me if chloral ever affected the heart. I replied by asking why he put the question. "Because," he answered, "in a minute or thereabouts after swallowing the drug, I felt pain in the region of the heart, together with palpitation. The pain and palpitation soon passed away, and I fell asleep." He did not know that chloral slows the action of the heart, or in any way affects that organ, so that his imagination did not prompt or excite the symptoms. He was moreover a man whose intelligence and temperament were such that he could be trusted to watch his own symptoms. I therefore advised him to repeat the chloral, and to ascertain if possible whether it did or did not act upon the heart as he supposed. He accordingly took it for three nights consecutively, in the dose of 15 grs. each night. Before taking it, he undressed and got into bed. Then laying his hand over his heart, he ascertained that the impulse and turbulence of the organ were not greater than what he was accustomed to. When these facts were determined, he swallowed the chloral. Directly, that is, in one or two minutes, as he reported to me, he felt a change in the character of the heart's action. The heart beat more irregularly—fluttered is the term he used—and with the fluttering came pain in the heart's region. The symptoms might be called anginiform. They continued less than a quarter of an hour, and then passed away. This experiment was repeated three times with the same result. I did not care to continue the experiment beyond this, or to increase the dose.

Case IX. *Insomnia.*—Mrs P., æt. 48, has menstruated irregularly for the past year or two, and has suffered from many of the symptoms incident to her age. Insomnia has perhaps been the most persistent and trying of all of them. I have not given her opium in any form. Indian hemp, hyoscyamus, &c., have not rendered her much service, but she has received great benefit from chloral hydrate. She has taken it in doses varying from fifteen to thirty grains. Sometimes one and sometimes two doses have been requisite to produce sleep. When she has required it, sleep has always followed, and there have been no unpleasant effects subsequently.

ACUPRESSURE AND SIR J. Y. SIMPSON.

Mr. Editor,—Three years ago, while attending the visit of M. Gosselin at *la Pitié*, in Paris, the writer was introduced to Dr. Simpson. He was of medium height, somewhat inclined to corpulency and almost carelessly attired. In both dress and bearing his *confrère* in honors, Sir Wm. Fergusson, would have approached more nearly the ideal of a British baronet. But his kindly manner on greeting me, and the way in which his benevolent features brightened as he inquired after his transatlantic friends in Boston, naming each one, will never be forgotten.

Being accompanied by an English physician, who acted as an interpreter, he sought, during the remainder of the visit, to convince M. Gosselin, and the attentive *internes* and students, of the value of acupressure as a means of arresting hæmorrhage. He said that in the hospitals of Paris—in the very *Hôtel Dieu*—owing to the conservatism of French surgeons, the cautery and caustics were not superseded by the ligature till a century and a half after the introduction of the latter by Paré. This was assented to by M. Gosselin. In support of this new procedure, he cited the case of a child who had undergone a major amputation, and who recovered without hæmorrhage or suppuration, though twelve hours after the operation the house-surgeon found the little patient had drawn out the pins and was playing with them! He said, also, that he had known the pins to be withdrawn *four* hours after the patient had left the operating table, and with no untoward result. As he was to leave Paris on the following day, as enthusiastic as a young man, Dr. Simpson wished to have M. Gosselin try acupressure *then;* but as there were to be no operations on that day, he finally asked to go to the dead-house, where

he exemplified his theory by applying acupressure to the brachial artery of a cadaver.

Having persuaded M. Gosselin to attempt its use, he advised all who were present to do the same, and after circulating several copies of his *Notes on the Progress of Acupressure*, bade all adieu, and departed from the walls that for centuries had echoed to the tread of celebrated men, but of none more so than the lately deceased and greatly lamented Professor of Medicine and Midwifery in the University of Edinburgh. D. C.

Hingham, Mass.

Selected Papers.

FUNERAL OF SIR JAMES Y. SIMPSON.

The funeral of Sir James Young Simpson was celebrated on May 13th. A large number of professional and literary bodies, with which the deceased was connected, walked in front of the hearse, this part of the profession being closed by the Senatus Academicus, in their robes. The hearse, which was open, and richly plumed, was followed by the relatives of the deceased on foot, the magistrates and Council of Edinburgh robed, the corporations of Bathgate (the birthplace of the deceased), Leith, and other places. The whole procession numbered upwards of 1700 persons, and 70 carriages followed. A large concourse thronged the streets, and the principal shops were shut during the funeral. The place of interment was Warriston Cemetery. The following was the order of the procession: The police, the public, the Granton Literary Association, the Philosophical Institution, the Chamber of Commerce, the Merchant Company, the solicitors before the supreme courts, the writers to the Signet, the advocates, the Kirk sessions and deacons of Free St. John's Church, the United Presbyterian Synod, the Free Church Presbytery, the Established Presbytery, the Rectors and Masters of the High School, the Principal and Professors of the Veterinary College, the Edinburgh Geological Society, the Botanical Society, the Society of Arts, the Society of Antiquaries, the Royal Scottish Academy, the Royal Society, the Royal Medical Society, the Pharmaceutical Society, the Medico-chirurgical Society, the Obstetrical Society, the students, the College of Surgeons, the College of Physicians, the Senatus and the office-bearers of the University, the hearse, the deceased's carriage, the relatives and friends, Lord Provost, magistrates and town council, the office-bearers of High Constables, the town council of Leith, the town council of Portobello, the town council of Bathgate, the general body of High Constables, the directors of the British Medical Assurance Society, carriages.

Reports of Medical Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES D. HOMANS, M.D., SECRETARY.

March 14th.—*Case of Coccyodynia.*—Dr. Z. B. Adams reported the case.

February 4, 1870. Carrie E., 11 years old last Christmas. Pale, delicate-looking, well grown and rather tall. Two years ago last September she slipped in going down stairs, and fell, striking upon the tip of the coccyx against the edges of several successive stairs. Complained of severe pain and tenderness about the coccyx, which has continued, more or less, up to the present time, with occasional exacerbations, on receiving any jar or shock. At times after slight injury, such as a sudden push, slip or stumble, has been confined to the bed or chair for several weeks, being unable to stand erect or walk without great suffering. Has always pain on going up stairs or rising from a chair. No pain in defæcation. A constant dull aching or soreness is complained of in the part. At the present time the region of the coccyx is so sensitive that she will not allow it to be touched. Is losing flesh and color; bowels irregular, and appetite poor and capricious. It is difficult to dress or undress her, as she cannot bear to be moved to an erect posture. Leeching and counter-irritation, sedatives and narcotics, have been tried without satisfactory results.

I advised Prof. J. Y. Simpson's method of subcutaneous tenotomy. After some hesitation this was consented to.

It was necessary to administer ether, on account of the excessive sensitiveness of the parts. A small puncture was made directly over the tip of the coccyx. Through this a tenotomy knife was entered along the back of the bones, and the muscular attachments divided on each side. Although there had been no complaint of pain in defæcation, the attachment of the levator ani to the tip of the coccyx was also

cut, and the knife passed completely round.

On recovering from the ether, it was at once perceived that the excessive sensitiveness of the part had disappeared. As soon as the soreness resulting from the operation began to diminish, it was found that she could stand and walk without the slightest pain. Gradually the feeling of soreness or dull aching also wore away.

It is stated by Simpson, and Dr. Adams believed generally admitted, that coccyodynia is a disorder peculiar to the female sex, or occurring only exceptionally in the male. The explanation of this may be found, perhaps, in the anatomical peculiarity of the female coccyx, in which the bony segments are separated by thin plates of fibro-cartilage, and the whole from the sacrum by an articular synovial sac. In the male these parts are found to be ossified quite early in life. If, then, we suppose the injury to be inflicted upon these little plates of fibro-cartilage, or upon the bursa, it is easy to conceive how the glutæus, when in full action, as in erecting the pelvis upon the fixed thigh, acts to push the segments of the coccyx together and the whole against the sacrum; and accordingly the remedy is found in division of those fibres of the glutei maximi which are attached to the sides of the ossa coccygis.

Dr. Hodges said this operation had been done several times by himself, Dr. J. M. Warren, and others in this city.

March 15th.—*Fragment of Bone lodged in Right Primary Bronchus for three Weeks; Death.*—Dr. Z. B. Adams reported the case and showed the specimen.

J. R., patient of Dr. G. S. Eddy, of Saxonville; Scotchman; 67 years of age; ship carpenter by trade; has lived many years on a farm; health always excellent, and has never employed a physician; short, neither full nor spare habit, very muscular and active; temperate and regular in living.

Three weeks ago, on rising from the breakfast-table, with his mouth full and talking, he suddenly choked. He was eating corn-cake and hash at the time, and wore a set of ill-fitting false teeth. He became suffocated, thrust his finger down his throat and tried to induce vomiting, and began to cough violently. This cough was dry, at first almost incessant. It continued, rather diminishing than increasing, until his death. His breathing also was short, difficult, hoarse and rattling from the beginning, but there was little or no expectoration, nor complaint of pain. Went about as usual a few days after the accident. Did not call a doctor for ten days or more, and then only to be rid of the cough, which was very harassing, especially on lying down. Last Sunday, Feb. 27th, one week before his death, he walked to church (a distance something short of two miles, up and down two steep hills) and back after attending service. Then complained only of shortness of breath in ascending the hills, and was obliged to stop and rest several times on the way home, from this cause. It was remarked that he did not cough at all during the service in church.

March 5th, 4½, P.M.—Seen for the first time, in consultation with Dr. G. S. Eddy. The patient is sitting up, complains of no pain, but of a harassing cough, which began by swallowing some corn-cake "the wrong way," just three weeks ago. Has been feverish and confined to the house only a few days. Countenance pale, haggard and anxious; beads of sweat upon the forehead; respiration labored and rattling; pulse small and rapid; no cough except on lying down; expectoration frothy, muco-purulent. Percussion over right back gave a dull sound, but no positive flatness, except over a space about the size of a dollar. Respiratory murmur indistinct; no bronchial respiration; a sharp sub-mucous rattle or click heard once, and a peculiar resonance of the voice remarked over the spot of greatest dulness. Death occurred on the morning of March 6th.

The *post-mortem* revealed the presence of a bit of mutton bone, about an inch in length and half an inch or more in thickness, irregularly fractured, firmly lodged in the right primary bronchus, about an inch from the bifurcation. The left lung was apparently healthy; the right lung presented abundant tubercular deposit (Dr. J. B. S. Jackson) and general congestion. At the spot of greatest dulness was a depression, reminding the observer of atalektasis. The branches of the right pulmonary artery (two of them at least) were blocked with firm fibrinous casts. Other organs healthy.

March 28th.—*Malignant Tumor in and outside of Larynx; Tracheotomy; Death from Exhaustion.*—Dr. Cheever reported the case and showed the specimen.

The patient had been under the care of many physicians of Boston and New York. He was thirty-seven years old, a shipmaster. The whole duration of the diseaae was six years; at first there was hoarseness and aphonia, but the existence of a tumor on the vocal cords was diagnosticated one year

ago, and was treated through the mouth by caustics, &c., by means of the laryngoscope. Tracheotomy was performed by Dr. Sayre, in New York, in August, 1869, on account of a sudden attack of dyspnœa threatening suffocation; and a tube has been worn ever since.

The tumor has been gradually increasing in size, so that for the last three months it has been necessary to lengthen the tube from one quarter to one half an inch every three weeks.

For four months he has been able to swallow liquids alone, and the growth of the tumor has been very rapid; it began to break down four weeks ago; there were considerable hæmorrhages, offensive discharge, sloughs, &c. Death took place from exhaustion.

The tumor filled the larynx, and just above the level of the cricoid cartilage had opened into the pharynx on one side; it surrounds the whole larynx outside, being about as large as a duck's egg, but before sloughing was the size of a goose's egg. The tube entered the trachea just below the cricoid, and passed through the tumor. The tumor did not extend into the trachea.

Dr. H. K. Oliver said that he saw this patient several years ago. He then had general inflammation of the laryngeal mucous membrane, of a mild type, but no neoplasm. About a year ago he saw him again. There was then a growth that had the appearance of being malignant. In reference to the feasibility of the removal of such a growth by laryngotomy, Dr. Oliver said that success would depend upon whether the adjacent tissues had been encroached upon. Other neoplasms besides those of a truly malignant nature had a tendency to return after apparent extirpation. Most of the warty growths were of this class; they differed from malignant growths not in their form alone, but in the fact that they did not spread to the adjacent tissues—the mucous membrane being their *habitat*. These warty forms may disappear spontaneously.

March 28th.—*Diaphragmatic Hernia.*—Dr. Borland reported the case and showed the specimen.

The patient, who entered the City Hospital March 8th, was a man 31 years old, born in Maine, of a strong, healthy family, and had been himself in robust health. Entering the army in the late war, he was wounded at the battle of Gettysburg, by a minie ball, which entered the chest at the tenth rib, about one-third of its length from its vertebral end, probably traversing the chest, making its exit between the 6th and 7th ribs, under the left axilla; then going through the left arm, in front of, but not injuring the left humerus. From the effects of this wound he was in one of the military hospitals for seven months, but recovered sufficiently well to work steadily at his trade, that of a chair maker, until the latter part of February last, two weeks before entrance. He felt in generally good health during this period, with the exception of suffering from dyspnœa on exposure, although he thought he had lost some thirty or forty pounds in weight. Four months ago, however, he began to have some pain at the epigastrium, which was increased by eating, and relieved by vomiting; for the last week before entrance the vomiting was persistent. In the early part of February he "took cold," had general pains and cough, with no chill, swelling of joints, or especial dyspnœa.

At the time of admission he had kept his bed for one week. Face was dusky. Tongue thinly coated; appetite variable. Bowels alternately loose or costive; pulse 120, weak; respirations 28; temperature 98·5° Fahr. No cerebral symptoms; nor was there pulmonary or cardiac distress; there being scarcely any cough. He had, however, a constant gnawing pain at the epigastrium, which did not extend through to the back, and there was some tenderness, on pressure, below the ensiform cartilage. He had intense pain after eating until relieved by vomiting. There had been no blood thrown off, either by the mouth or rectum. He slept but poorly.

The physical examination gave the following results:—The chest was very thin, with the clavicles very prominent, especially the right, which stood up in nearly its entireness, above the surfaces of the supra and infra clavicular spaces.

Percussion, in front, over the entire left chest, resonant; also over right, with the exception of a space between the right nipple and the right edge of the sternum, and the 5th or 7th ribs, and in this place were seen in the intercostal spaces, the pulsations of the heart. Here also were heard the cardiac sounds, rapid, but normal, and in greatest intensity. In the left chest they were heard, but only by transmission, and of a corresponding intensity to what is commonly heard in the right chest.

In the left lower back there was some dulness. The area of hepatic dulness was normal. There were no râles heard in respiration, but a jerky waviness to the respiratory murmur as heard beneath the right

clavicle, and in the upper half of the right back. In the left chest there was nothing heard except ordinary respiratory murmur, not particularly marked either loud or deficient, and the heart sounds as before said.

He was treated by milk and lime water hourly in half ounce doses, broths, wines, stimulants, and nutrient enemata, but he steadily and rapidly failed, and died March 12th, having been four days in the hospital.

An autopsy was made by Dr. Webber, March 15th. On opening the body, the left chest was found to be occupied by the lung, by the whole of the stomach and its mesentery, and some of the omentum, and about one and a half pints of grayish-looking fluid, which had come from the stomach. The stomach and other portions foreign to the chest had passed up through an opening in the diaphragm, which was rounded and about 2½ inches in diameter.

The stomach was adherent to the pleural side of the diaphragm, the result of old inflammation. It had, however, recently ruptured, allowing free escape of its contents—being the grayish looking fluid above alluded to—into the pleural cavity. A bridle of old organized lymph, estimated from five to six inches long, passed across and behind the stomach from the lower lobe of the left lung to the outer wall of the diaphragm. The duodenum was dragged over to the left, across, behind the transverse colon.

The heart was entirely on the right side, with the aorta turning normally to the left. The heart was perfectly healthy—not adherent to the pericardium.

The right lung contained air in its upper, middle, and upper part of lower lobes, but the lung was generally flattened against the ribs, and firmly adherent throughout to the costal pleura and pericardial sac. The lower part of the lower lobe was thoroughly compressed and contained no air. There were grayish translucent tubercles scattered throughout both lungs, most, however, on the right lung, and especially at the apex.

The liver was in all respects normal.

The right kidney was a little more adherent to the surrounding tissues than usual; the left had a roughened, nodulated look, after stripping off the capsule; otherwise they appeared healthy.

Most of the glands connected with the small intestine were enlarged and dense. Portions of the intestine were deeply ulcerated, the bottoms of the ulcers being covered with minute white spots (tubercular deposits).

The body of the 7th vertebra had completely degenerated into a mass of cheesy and puriform material, and there was in front of it and on its right side a sac the size of a hen's egg, containing the same material, and communicating with the mass that occupied the place of the vertebra, only the upper and lower tables of the vertebra retaining their osseous character; the cavity of the spinal cord was probably narrowed, but the cord did not seem to be compressed. In this cheesy mass, which occupied the place of the vertebra, no foreign body, such as lead, bits of clothing, &c., could be found, though carefully sought for. No marks of the course of the ball could be found, and nothing showed which direction it took.

Dr. Borland said, "in Dr. Bowditch's monograph, published in 1853, in which he analyzes 88 cases, all that were recorded in medical literature between the years 1610 and 1846, he gives various points of interest, from which I extract the following:—

The hernial opening was observed in the left side of the diaphragm 41 times out of 88. In this case it was in the left.

The general shape of the opening of the diaphragm is rounded or oval. This opening is round in form.

The stomach was found in the left pleural cavity 34 times. The omentum 24 times. The mesentery once. In our case, the foreign bodies were stomach, mesentery and omentum.

The stomach was the most frequently displaced of any organ, being 46 times in 82 cases, and was wholly in the chest in 32 cases. In three cases it was turned up into the chest, the large curvature being bent upwards towards the clavicle, the pyloric and cardiac orifices being nearly level with the diaphragm. This was the condition in our case.

The heart was recorded as thrust to the right 14 times out of the 31 in which it was mentioned.

In 36 cases there was mention of the pulmonary symptoms, and in 27 there was labor in the respiration. Ever after the gunshot wound, this patient had dyspnœa on exposure; he had neither cough, expectoration, or alteration of voice.

Under the general remarks as to the diagnosis, Dr. Bowditch says that there were only two recorded instances of the recognition of diaphragmatic hernia—one by Mr. Lawrence, of London, and one case at the Massachusetts General Hospital.

While the patient was under my charge, the question repeatedly suggested itself to

my mind, could the heart be dislocated by a gun-shot wound, or from the effects of such a wound? To this I could give no answer, and certainly I did not think of the real state of things. I have no doubt that the heart dislocation was produced by the hernia; but the question is unsolved, were not the hernia and the diseased vertebra results of the gun-shot wound? I am inclined to believe they were, but can give no positive proof, as other traces of the internal wounds we could not find."

Dr. FIFIELD said it was stated by Guthrie that wounds of the diaphragm never heal, and are always followed by hernia; he proposed to cut down boldly and relieve the stricture wherever it occurs, but the operation has never been done.

Dr. BOWDITCH considered any operation of this kind justifiable in view of what is done nowadays in the removal of large tumors, &c., from the abdominal cavity. He thought there may be many cases of this affection resulting from wounds received in the late war. The diagnosis would be aided by experiments in swallowing, &c. In the case which was seen by him in the Massachusetts General Hospital, the man had entered on account of an injury to the back; the heart was found to be dislocated, and borborygmi were heard in the left chest; diaphragmatic hernia was diagnosticated, but at the autopsy it was found to be congenital. The heart had been dislocated a long time.

Dr. JACKSON made some remarks upon internal strangulation in general, and said that he had often wished that an operation might be tried in some of these cases. The diagnosis must, of course, be well settled before such a dangerous operation is undertaken; but he thought that in some cases there could be very little question in regard to it. Besides the usual symptoms of strangulation, there is occasionally a sign that he thought had not been sufficiently insisted upon, and that is a more or less distinct tumor in the abdomen. Cases of strangulation, and perhaps many, undoubtedly get well when left to themselves. As in the case of external herniæ, the intestine may get partially strangulated and afterwards withdraw itself. The adhesion, or whatever the cause may be that leads to the strangulation, is a permanent one, and the very circumstance of there having been several similar attacks is one of the diagnostic marks of the affection. Dr. J. referred to a case in illustration, that he had formerly heard related by Dr. James Jackson, and in which there were the symptoms of internal strangulation, and also the tumor. A strict abstinence from cathartic medicines that were being given, as usual in such cases, was enforced; the patient was made as comfortable as possible, and in due time the symptoms subsided, the tumor disappeared, copious evacuations from the bowels followed, and the man was well. Instead of being girt, the intestine not unfrequently lies perfectly loose, so that it can be withdrawn at once, and could be upon the living body; it being remarkable in these cases that the obstruction should seem to be so perfect when there really was none at all. If the abdomen had been opened the adhesion that caused the symptoms would have generally been readily found and easily divided. In other cases, however, a small, hard band of false membrane girts the intestine like a piece of catgut, and so tightly that it is with difficulty seen, and would not be easily divided upon the living body without wounding the intestine.

APRIL 11th.—*Sudden Dyspnœa relieved by Venesection.*—Reported by Dr. CHEEVER.

Dr. CHEEVER was called in haste, in the evening, and found a lady of 35 years, with the following history and appearance.

Had been well, except dyspepsia and occasional attacks of palpitation. Twenty minutes before was suddenly seized with intense dyspnœa. At time of visit she was half recumbent on bed, leaning over a wash-basin, and expectorating a bright pink mucus mixed with air. Breathing very distressing and short; face and lips nearly purple; cold perspiration; cool hands and arms; feeble, flickering pulse; intense distress; chest full of coarse bubbling râles, both sides, resonant; no vesicular respiration; heart-sounds masked by noises in the lungs.

Ipecac, grs. 120, in successive doses, and mustard ℥ij. in hot water, produced no emesis, nor nausea. Brandy and ammonia were given to sustain the overloaded heart. The whole shoulders, back and loins, were wrapped in an enormous sinapism.

No amendment followed.

The patient grew worse; expectoration ceased; she was, apparently, about to die.

It seemed to Dr. Cheever that the patient was being drowned in her own secretions. From some cause the machinery of respiration had become reversed, and immense *exosmosis* of fluids into the bronchial tubes was taking place, while absorption was paralyzed. The only way to set up *endosmosis*, and turn the tide, was to remove a portion of the contents of the vessels.

One pint of blood (by beer measure) was

taken from a vein in the arm. It was black, and sluggish in running. The first eight ounces produced no effect. Then the pulse began to grow stronger, the breathing easier, and the color better. When the pint had been taken the patient laid down, breathed easily, and the color became florid. She recovered in a few days. *No expectoration occurred after the bleeding.* The lungs cleared by absorption. The heart was subsequently examined and found not remarkable. The pulse became 72, full and regular.

The case seems to bear a resemblance to one reported by Dr. Abbot a year ago; and to recent cases narrated by Drs. Cotting and Fifield.

Dr. MINOT said he would mention, in this connection, the case of a young man who was admitted into the Mass. General Hospital on the 5th inst., with great dyspnœa, severe pain in the chest, cough and pneumonic expectoration. He was in the habit of drinking freely, and the attack followed exposure to the wet and cold. His condition was such that it was impossible to make a careful examination of the chest, but there was flatness on percussion, with coarse crepitation over the whole of the right front, and sonorous râles on the other side; the back could not be examined. The sounds of the heart were normal. The chlorides were absent from the urine. The pulse was 116 in the minute, small and thready; respirations, 32. The temperature on the evening of his admission was $103\frac{1}{2}^{\circ}$. The prognosis was extremely unfavorable. He was ordered a jacket poultice, morphia, beef tea and milk. On the following morning his condition was not improved; temperature, 102°; pulse, 120; distress, as great as before. He was quite delirious in the night. On account of the thread-like character of the pulse, and the extreme dyspnœa, Dr. Minot ordered twelve ounces of blood to be taken from the arm, in the hope that the pulmonary circulation might thereby be relieved. Although no striking change took place immediately after the bleeding, yet the urgent symptoms began to diminish, and in a few hours the patient was entirely relieved. He is now out of danger.

MAY 9th.—*Myeloid Sarcoma.*—Dr. HODGES exhibited a specimen of myeloid disease of the lower jaw. He remarked that the peculiar characteristic of this disease was the presence, in large numbers, of corpuscles containing many (from ten to thirty and even more) nuclei or nucleolated nuclei, and resembling those found in fœtal marrow. Although these cells had previously been described by Robin, under the name of *myeloplaxes*, as an anatomical element of the medulla of young bones, tumors containing them were first recognized by Paget, and their presence was thought by him to denote a specific form of disease, to which he gave the name of "myeloid." Such tumors are now, however, considered as a variety of the great group of sarcomata. The sarcomata of bone originate either in the periosteum or in the interior and cancellous structure; and, though myeloid cells may occasionally be detected in periosteal sarcomata, or even in growths starting from the soft tissues, as the eye, breast, or testicle, they are only found in numbers sufficiently large to constitute a characteristic element, though never the entire structure, in sarcomata which are developed from the diploe of bones, and rarely, if ever, in those springing from the true medullary cavity. These tumors now bear the name of myeloid sarcoma, or, in the more exact nomenclature of Virchow, of myelogenetic sarcoma (*myelogenes sarkom*).

The present specimen was removed from a patient in the Massachusetts General Hospital, a man 43 years old, otherwise in good health. The growth commenced in the region of the molar teeth, about four months before its removal. It extended from the angle of the lower jaw on one side, nearly to the angle on the other, sprouting from the alveolar border, and forming a tumor of such size as to protrude the chin and lower lip an inch or more beyond the upper. The deformity which it caused was well shown in a photograph of the patient which was presented. The growth was vascular, soft, and lobulated, was rapidly increasing in size, and had begun to invade the cheek. There was no glandular complication. As the development of this peculiar growth seemed sometimes to be stimulated by the condition of the teeth, or their roots, their misplacement, or by their extraction, it was of interest to notice that, since the age of 25, the patient had been toothless. The operation consisted in the removal of all that portion of the jaw which was involved by the disease. It was followed by rapid recovery, with little external deformity. The origin of the tumor from the interior of the bone could be very plainly seen on inspection of the specimen. The microscope revealed large numbers of multinucleated cells. The single cells were of various shapes, being round or oval, and were unseparated by any intercellular substance.

In regard to the probable recurrence of the disease, Dr. Hodges said, that myeloid sarcoma was generally considered as a benign tumor, but such growths were often composite, and even when they were not, showed sometimes a metastatic disposition, and might reappear locally, or in the lungs and elsewhere, after removal.

The prognosis of sarcomatous growths was as much indicated by the position of the tumor and the rapidity of its development, as by the revelations of the microscope. Immunity from a return depended on thorough and early extirpation.

Dr. JACKSON exhibited, from the Society's Cabinet, a portion of the pelvis that he believed to have been the seat of this disease. The ramus of the ischium and of the pubes was dilated into an imperfect bony shell, as large as the fœtal head, and in the recent state was filled with a soft substance of moderate consistence, and of a peculiarly mottled reddish and yellowish color. The case occurred many years ago, and there was no microscopic examination. He also referred to two other specimens, which are in the College Museum, and in both of which there were the characteristic microscopic appearances. In one, the head of the tibia was the seat of the disease, which, as in the above case, was remarkably limited, and had formed in the interior of the bone, so as to distend it into a large, thin and very imperfect cyst. In this case, unfortunately, no record was made of the gross appearances. The other College specimen consists of a defined tumor that formed in the soft parts over the ankle, was of the size of a very small orange, and resembled in color the Society's specimen.

APRIL 25th.—*Cretaceous Degeneration of the Crystalline Lens.* Dr. WILLIAMS reported the case and showed the specimen.

Miss ——, æt. 18, was hit on the left eye with a stick four years since. Had much pain in the eye for two years, at the end of which time the pain subsided, but vision was lost.

For a year past, as she thinks, the lens has been in the anterior chamber, and has been opaque. The eye has occasionally been red and painful.

She was seen at the City Hospital by Dr. Williams on the 25th of March, 1870. The cornea was somewhat cloudy, and the size and tension of the globe a little diminished. The iris was atrophied and the pupil widely dilated. The lens lay in the anterior chamber, and was evidently hardened and shrunken. Its immediate removal was advised, to obviate danger to the other eye from sympathetic inflammation in case this hard mass should become displaced so as to irritate the ciliary nerves.

After section at the lower part of the cornea an attempt was made to grasp and remove the lens; but this slipped into the posterior chamber and disappeared in the softened vitreous humor, rendering it necessary to search for it with a curette. Upon being removed the lens was found to be completely transformed to a cretaceous condition, and lessened about one-third from its normal size.

Since the operation, notwithstanding the loss of some of the vitreous, the globe has retained nearly its normal size, with a tolerably clear cornea, about as much so as before.

MAY 9th.—*Death of Sir James Y. Simpson.*

Dr. PARKS rose immediately after the reading of the Records, and said that the sad task had been assigned him of announcing to the Society the death three days previously of Sir James Y. Simpson. Dr. Parks gave some reminiscences of a visit to Professor Simpson in 1852, when Professor Retzius of Stockholm was a guest of the distinguished Scottish physician. He spoke of the unbounded hospitality—social and professional—which Dr. Simpson lavished on all medical men from abroad, and described the unwearied toils by night as well as by day, which contributed to the eminence of the name now inscribed on the rolls of departed celebrity. Touching upon the numerous innovations in surgery and medicine which have been suggested by Sir James Simpson's fertile mind, but leaving it to others to assign to them their true place in the science and the art, Dr. P. took satisfaction in reading as follows, from an editorial written by him in the Boston Medical and Surgical Journal, Sept. 16th, 1869, with regard to the agency of the lamented deceased in placing chloroform on the list of anæsthetics:—"We fully acknowledge the enterprise which led Dr. (now Sir) J. Y. Simpson to seek out an agent which should be preferable to ether; and profess for ourselves the opinion that in *military* surgery *chloroform* has an advantage over ether in its greater portability, rapidity of action, and consequently in many cases its availability." Dr. Parks claimed that he was not using merely the language of posthumous eulogy, when he asserted that it was remarkable mental capacity and energy, executive ability and tact, which had raised the Edinburgh physicician, before he had reached middle age, to a cosmopolitan repu-

tation. But the teeming brain strained to its utmost tension, and having perhaps reached the greatest development possible to it here, had now snapped the silver cord, and set free the subtler essence in a higher plane of being, to survey a wider horizon.

On motion of Dr. BOWDITCH, it was voted that the preceding remarks be entered on the Records of the Society.

RHODE ISLAND MEDICAL SOCIETY.

THE Fifty-Ninth Annual Meeting of the Rhode Island Medical Society was held in Providence, Wednesday morning, June 8th, and was attended by a large number of members of the Society from the city and other parts of the State.

The President, Dr. J.W. C. Ely, called the meeting to order at 10 o'clock, and the annual reports of the several standing committees were presented, read, received and ordered to be placed on file. The Board of Censors having held their usual meeting previous to the organization of the annual meeting, Dr. Sylvanus Clapp, Secretary of the Board, read the annual report, which was received and ordered on file. On recommendation of the Board, the following named gentlemen were elected Fellows of the Society:—Dr. Gustavus Radeke, Dr. Charles H. Leonard, Dr. Thomas Maher, Dr. Albert E. Ham, all of Providence. Dr. Alonzo Clarke, of New York, was elected an honorary member. The Treasurer, Dr. T. K. Newhall, presented his annual report, which was read, accepted and ordered on file. Receipts, including cash in treasury at last annual meeting, $402.24. Expenditures, $410.59.

Dr. Otis Bullock, of Warren, delegate from this Society to the Annual Convention of the American Medical Association, held at Washington, D. C., in May, made a report to the Society of the proceedings of that Convention.

Dr. G. L. Collins proposed sundry amendments to the by-laws of the Society, which were read, and on motion, were adopted.

The President, Dr. Ely, appointed the President and Secretary elect a committee to superintend the printing of a new and revised edition of the charter, by-laws and a list of members of the Society.

Dr. S. A. Arnold, Secretary of the Trustees of the Fiske Fund, read the annual report of the Board, which was received and ordered on file. No prize was awarded for an essay received during the past year. The Trustees offer the following prizes for the year 1870:—

First—Ununited Fractures. The conditions under which they occur, and the most successful method of treatment.

Second—Hydrate of Chloral. Its physiological effects and therapeutic uses.

For the best desertation on each or either of these subjects, the Trustees will pay the sum of one hundred dollars. Essays must be sent to the Secretary of the Fiske Fund Trustees, Dr. S. A. Arnold, on or before the first day of May, 1871.

The Society then proceeded to the annual election of its various officers by ballot, as required by the by-laws, and the following named gentlemen were elected for the ensuing year, Dr. Ely having declined a re-election:—

President, Dr. George L. Collins, of Providence—*First Vice-President*, Dr. Lloyd Morton, of Pawtucket—*Second Vice-President*, Dr. Fenner H. Peckham, of Providence—*Recording Secretary*, Dr. Clarence T. Gardner, of Providence—*Corresponding Secretary*, Dr. Charles W. Parsons, of Providence—*Treasurer*, Dr. T. K. Newhall, of Providence—*Board of Censors*, Drs. T. C. Dunn, Newport; Ariel Ballou, Woonsocket; Charles Fabyan, Providence; Otis Bullock, Warren; Sylvanus Clapp, Pawtucket; James Miller, North Providence; J. W. C. Ely, Providence—*Committee on Registration*, Drs. E. M. Snow, E. T. Caswell, Providence; S. Clapp, Pawtucket; James H. Eldridge, East Greenwich; T. C. Dunn, Newport—*Committee on Publication*, Drs. George E. Mason, H. G. Miller, A. R. Becker, Providence—*Audit Committee*, Drs. C. W. Parsons, Charles Fabyan, Providence—*Dinner Committee*, Drs. J. W. C. Ely, T. K. Newhall, Providence.

Dr. C. W. Parsons read a communication from a committee of the American Medical Association, on the subject of an annual medical registration, which was referred to a special committee consisting of Drs. S. Clapp, E. T. Caswell, and George P. Baker.

Dr. George E. Mason, Secretary, read a well written eulogistic obituary essay upon the late Hon. Henry Halsey Childs, M.D., of Pittsfield, Mass., prepared by Dr. S. Clapp, of Pawtucket, which was received, and upon motion, referred to the Committee on Publications. The Secretary also read a petition to Congress, praying that body to establish the rank of the medical officers of the United States Navy, which was signed by many of those present, and will be forwarded to the Senators from this State for presentation in Congress.

Dr. Robert Miller, of Providence, was appointed Orator, and Dr. A. R. Becker, substitute, and Dr. Charles W. Parsons, of Providence, Anniversary Chairman for the next annual meeting.

Drs. S. S. Keene and C. T. Gardner were appointed to prepare papers to present at the next quarterly meeting of the Society, which was appointed to be held in Woonsocket, on the third Wednesday in September.

Dr. Charles O'Leary was appointed orator for the meeting in December.

Dr. Corliss, delegate from the Medical Society of the State of New York, was introduced, and addressed the Society.

The annual dinner was served at the Aldrich House.

Medical and Surgical Journal.

BOSTON: THURSDAY, JUNE 16, 1870.

CHARLES DICKENS,

As to the author of matchless demonstrations of mental physiology and pathology in many phases, we claim the right to drop

one little flower upon the grave of Dickens. In every profession and every walk of life his aphorisms and the names of his personages have become as "household words." Perhaps no writer of fiction has ever won all hearts as he did for whom the whole world is now thrown into mourning. He was in a certain sense the Robert Burns of prose. "A man's a man for a' that," was the key-note of his teachings.

Manibus date lilia plenis!

The safe return of Dr. Jacob Bigelow from California is attested by the following lines attributed to him, which we take from the *Advertiser*.

YO-SEMITE:

OR SEEING THE ELEPHANT.

BY A RETURNED TRAVELLER FROM CALIFORNIA.

Ye pilgrims of Yo-Semite
Whose courage nought can daunt,
Push onward to your destiny
And see the elephant.

Though gulfs are deep and walls are high,
And rocks are steep and slant,
You'll never dare go home and say
You've missed the elephant.

White streaks adown the mountain side
Disclose the forms you want;
This is the trunk and that the tail
That make the elephant.

The rain is drizzling fast and thick,
Be warm or dry you can't—
You wish the gods had gifted you
With hides of elephant.

'T is getting near the middle night,
Some ease or rest you want,
Such luxuries are not for those
Who do the elephant.

Your empty stomachs may suggest
Some dreams of ducks or braut,
Cheer up! in less than half an hour
You'll sup on elephant.

Wearied and worn, and galled and sore,
Your feet on earth you plant,
The lightened horses trot ahead
To seek the elephant.

On foot behind, with many an oath,
You sweat and toil and pant,
And when you think you spot the beasts,
Up looms the elephant.

Some shanties made of leaky boards
Take in just half who want.
The rest are entertained outside
Viewing the elephant.

Your head is mazed, your eyes are dim,
Reflect or feel you can't—
Little care you for scenes and falls,
Or even for elephant.

Long live King Pullman of the cars—
And long live General Grant—
Long live the owls and grizzly bears—
You've seen the elephant!

Boston, June 3, 1870.

We learn that on the 6th of April, 1870, Dr. Jacob Bigelow, of this city, was elected a Corresponding Member of the Medico-chirurgical Society of Edinburgh. The Medico-chirurgical Society and the Massachusetts Medical Society have now a bond of union in their mutual connection with one whose name is an honor to both associations.

"Harvard University.—A Descriptive Catalogue of the Warren Anatomical Museum; by J. B. S. Jackson, M.D., Curator of the Museum, and Shattuck Professor of Morbid Anatomy."

This work, which has cost Dr. Jackson so much labor, has come to us addressed as "from the Medical Faculty of Harvard University." We hardly know how to express our thanks for the invaluable gift.

HISTORIANS DIFFER!

"If we are to accept the Boston claims literally, we must look upon the introduction of chloroform not only as a special injustice to their school, but as an injury to the world at large; whereas we are rather inclined to look upon the discovery of chloroform and the rapid spread of the practice of general anæsthesia as cause and effect."—*London Med. Times and Gazette*, May 28, 1870.

"The position of Sir James Y. Simpson in reference to anæsthetics may be easily stated. He had of course no claim whatever to their introduction, nor is it probable that their general acceptance would have waited for his advocacy of their claims. Indeed, as we have seen, ether had come into a very wide use before chloroform was proposed." — *British Medical Journal*, May 14th, 1870.

More than half the victory is accomplished. The subject is no longer *ignored*.

MAYOR SHURTLEFF'S ADDRESS AT THE RECENT DINNER OF THE MASSACHUSETTS MEDICAL SOCIETY.

Mr. Chairman and Fellows of the Medical Society:—The always very pleasant and instructive occasion—the gathering together of the medical practitioners of Massachusetts—brings us here to-day, at the commencement of another year, to greet each other with the accustomed friendly recognition; and, thankful for the mercies that have been vouchsafed to us, and grateful for the success that has crowned our labors of the past year, to renew our endeavors in the discharge of the varied duties and responsible trusts of our most honorable, benevolent and useful profession. The citizens of Boston are never better pleased than when, on this regular recurring anniversary of the Massachusetts Medical Society, they behold the pleasant countenances and in-

telligent features of the medical men of the commonwealth gladdening our streets and byways, and diffusing about them a general serenity, resulting from the confidence that all is well, and that the outpouring from Pandora's famous box of all the ills that flesh is heir to, has for a while given way and yielded to the power and skill of your professional knowledge and beneficence. Gentlemen, allow me to join my professional brethren of this city in extending to you a most hearty welcome to Boston; and to you, Mr. Chairman, and to your associates on the committee of arrangements, I feel very grateful for the privilege of expressing, in behalf of my fellow citizens of all professions, occupations and callings, a most cordial greeting on this your annual gathering for business, and the exchange and cultivation of friendly feelings and the social sentiments. Nothing tends so much to strengthen the bonds of professional friendship, and to increase the influence and make known the excellencies of the good physician, as the demonstration which you make this day before the people, by throwing aside the engrossing care of your responsibilities, and joining each other, as you do now, in this reasonable and social intercourse with fraternal enjoyment. Such, I hope, will ever be the case with you in all your future meetings. That poet was surely a good student of human nature, and I know he was a good doctor, too, who said that

> "Care to our coffin adds a nail no doubt,
> And every grin so merry draws one out."

He certainly made life more agreeable, if not longer, by his pleasantries and merry thoughts.

On a former occasion, Mr. Chairman, I availed myself of an opportunity like this to say a few words about the class of men that compose this our Society; and I should now like to express again my sentiments of respect for the brethren who have devoted the best energies of their nature to the disinterested work of the good physician. Educated far beyond those of the other professional callings, the physician, a student and observer by day and by night, a philanthropist by necessity as well as by practice and by habit, quietly and unobtrusively performs his never-ending works of human kindness in dispensing his kind words and his most acceptable services, while soothing pain and relieving suffering. His daily practice and habits of life make him a constant and careful observer, not only of those things that appertain to his peculiar occupation, but of all matters that are presented to his view and knowledge. Well educated in practical as well as theoretical knowledge, conversant with all generalities, mixing unavoidably with all classes of the community in which he lives, with an attentive ear and practised eye, he has opportunities for witnessing and the ability of collecting and utilizing a vast amount of information and an incredible number of useful facts, for the instruction and benefit of his race. It is this that gives power and usefulness to the good physician, that makes him esteemed and respected, and makes his counsel and advice in almost all matters so much sought and so highly regarded. It is such men, Mr. Chairman, I assure you, that our citizens are always glad to welcome here, not only on this, but on all occasions; and I know that I express their sentiments in joining you in your greetings to them to-day.

In regard, Sir, to the learned sentiment which you uttered in calling me up to judgment before my peers, I have very little to say. I will honestly own up to having been concerned somewhat in disturbing some of the old landmarks of the city, in removing some of the old decayed wood and debris that has heretofore prevented a good healthy growth of our old city; and if the scalpel and the saw have been unsparing in the removal of necrosis that impeded progress, and if a salutary stimulus has been given of late to the sluggish condition of our affairs, consequent to the great nationa disorder that has so severely afflicted us, I hope I may be pardoned for the humble part I have taken in the accomplishment. If, sir, I have found things wrong side up, have I not been right in turning them upside down? Would not you, and all other good practitioners, if called in consultation, have advised to so doing? I think you would.

And now, sir, allow me to congratulate the Society on the prosperity which it so apparently enjoys. May success continue to attend the labors of all its fellows; and may each enjoy years of uninterrupted and unbounded happiness, with the consciousness of having well performed his part in the past, and with the determination also of preserving for all time to come the well-merited title of the good physician.

Dr. B. W. Richardson on Chloroform Deaths. *Mr. Editor*,—In a long lecture (6½ columns) in London *Medical Times and Gazette*, May 28th, received to-day, Dr. B. W. Richardson (an authority I suppose it will be admitted) gives his ideas "On Death from Chloroform," and how to avoid it (the death) if possible. The air must not be moist, but dry or dried—tempera-

ture must be right, &c. &c. Then the chloroform must be given slowly, &c. After all, some can't take it safely—percentage of deaths must depend "on the percentage of organically sound or unsound persons who are subjected in a given number of cases to the vapor of chloroform"!!

Comparative safety of ether *not* mentioned, *nor ether itself at all*, except as not being useful when mixed with chloroform. Dr. Richardson says:—

"In conclusion, reviewing the past of chloroform as an anæsthetic from its introduction until now, I see nothing to lead me to assume that any of the deaths which have followed the administration have been due either to absence of skill on the part of administrators, want of special knowledge respecting special apparatus, or absence of special mixtures of chloroform with other fluids. I see nothing, again, in bad quality of specimens of chloroform to account for the fatality which has followed its use. Lastly, I see nothing in operative surgery (except that there seem to have been more deaths from the vapor when it has been used for minor than for major operations), to account for the fatality. All through the chapter one administrator appears to have been as skilful and as thoughtful as another, one quality of chloroform as good as another, one operator as careful as another. I can find no single death from chloroform in which even a pretext of a charge could be raised against these factors in the catastrophe. We must, therefore, look for the cause of death in some inherent fault in chloroform itself, which unfits it for every person indiscriminately; or, putting it the other way, in some inherent fault in the organisms of certain persons who die, which renders then unfitted to meet the physiological changes the chloroform excites when it is introduced into the organism." **

The Massachusetts House of Representatives lately passed, after a great deal of debate and after many attempts to defeat it, a bill that gives promise of an abatement of the slaughter-house nuisance in Brighton. It gives a charter to a company for the purpose of erecting slaughter houses on land in Brighton which it has the authority to take in the same manner as land is taken for railroads. The land must be in a location to be approved by the State Board of Health. The buildings in all the details of construction must also be approved by the board, and the business of the company must be carried on under regulations established by the same authority. When any person engaged in slaughtering within six miles of Faneuil Hall Market is found by the State Board of Health to be carrying it on in a manner injurious to the public health, he may be directed to carry it on upon the premises of this corporation. In case the company and the butchers do not agree upon the terms the board of health may also fix the price to be paid to the company for the use of its facilities, but it is provided by a very judicious amendment that the butcher shall not be compelled to remove his business without sufficient notice, nor if in the meantime he changes his method of slaughtering so that it shall no longer be injurious to public health.

The butchers of Brighton have been very active in their opposition to this bill, but its inherent merits have prevailed. There is really no reason why they should oppose the incorporation, now that the bill has no monopoly in it. They will be perfectly free to carry on their business on their own premises if they are cleanly in their methods. The gain to public health will be very great if the company is organized and operations are carried on under it.—*Advertiser.*

Who would have thought the State Board of Health would be bringing about their reforms with such promptness as this? With them it seems indeed to be "a word and a blow." Nuisances must be about these times finding out what it is to be *bored of health*. According to the doctrine of appetency Brighton noses ought to diminish in size, among coming generations.

☞ We call attention to the prizes offered by the Rhode Island Medical Society, *vide* page 465.

☞ A few extra copies of last week's Journal were struck off, and are for sale at the Journal office.

To Correspondents.—Communications accepted:—Case of Poisoning by Atropia.—Case of Poisoning by Aconite.—The Relation of Hæmoptysis to Pulmonary Tuberculosis.

Died,—At Plymouth, 10th inst., Dr. Winslow Warren, 75.

Deaths in fifteen Cities and Towns of Massachusetts for the week ending June 11, 1870.

Cities and towns.	Number of deaths in each place.	Prevalent Diseases. Consumption.	Pneumonia.
Boston . . .	112	15	3
Charlestown	8	1	0
Worcester . .	27	6	3
Lowell	9	1	1
Milford	2	1	0
Chelsea	2	0	0
Cambridge . .	7	2	1
Salem	8	3	1
Lawrence . . .	6	1	2
Lynn	8	3	1
Gloucester . .	5	1	1
Fitchburg . . .	1	1	0
Newburyport	3	0	0
Fall River . .	15	2	1
Haverhill . . .	9	3	1
	222	40	15

Lynn reports one and Worcester two deaths from smallpox. From all the above-named places there are reported nine deaths from scarlet fever, five from croup and four from measles.

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending June 11th, 112. Males 55—Females 57.—Abscess, 1—accident, 5—apoplexy, 2—asthma, 1—disease of the bowels, 1—inflammation of the bowels, 1—congestion of the brain, 1—disease of the brain, 6—inflammation of the brain, 2—bronchitis, 6—cancer, 4—cholera infantum, 1—cholera morbus, 1—consumption, 15—convulsions, 5—croup, 5—debility, 7—diarrhœa, 1—diphtheria, 1—dropsy of the brain, 4—scarlet fever, 3—typhoid fever, 2—gangrene, 1—disease of the heart, 5—homicide, 1—disease of the kidneys, 3—congestion of the lungs, 2—inflammation of the lungs, 1—malformation (of the rectum), 1—marasmus, 3—measles, 2—old age, 2—peritonitis, 1—premature birth, 3—puerperal disease, 2—scrofula, 1—disease of the spine, 1—suicide, 1—sunstroke, 1—tumor, 1—unknown, 3—whooping cough, 2.

Under 5 years of age, 50—between 5 and 20 years, 9—between 20 and 40 years, 18—between 40 and 60 years, 22—above 60 years, 13. Born in the United States, 75—Ireland, 25—other places, 12.